CLAIMS

What is claimed is:

1. A method of coding video, comprising the steps of:

coding the video into a data-stream of base layer frames;

computing residual image frames in a transform domain from the base layer frames;

constructing extended base layer reference frames from the base layer frames and at least portions of the residual image frames;

motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

predicting motion-compensated residual image frames from the motion-compensated extended base layer reference frames and the video; and

fine granular scalable coding the motion-compensated residual image frames into a data-stream of temporal frames.

2. The method of coding video according to claim 1, further comprising the step of fine granular scalable coding the residual image frames into a data-stream of SNR quality frames.

3. The method of coding video according to claim 2, further comprising the step of combining the data-stream of temporal frames with the data-stream of SNR quality frames to construct a single data-stream of the temporal and SNR quality frames.

4. A method of coding a video signal, comprising the steps of:

coding the video signal into a data-stream of base layer frames;

computing residual image frames in a transform domain from the base layer frames;

constructing extended base layer reference frames from the base layer frames and at least portions of the residual image frames;

motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

predicting motion-compensated residual image frames from the motion-compensated extended base layer reference frames and the video signal; and

fine granular scalable coding the motion-compensated residual image frames into a data-stream of temporal frames.

5. The method of coding a video signal according to claim 4, further comprising the step of fine granular scalable coding the residual image frames into a data-stream of SNR quality frames.

6 The method of coding a video signal according to claim 5, further comprising the step of combining the data-stream of temporal frames with the data-stream of SNR quality frames to construct a single data-stream of the temporal and SNR quality frames.

7. An apparatus for coding video, comprising:

means for coding the video into a data-stream of base layer frames;

means for computing residual image frames in a transform domain from the base layer frames;

means for constructing extended base layer reference frames from the base layer frames and at least portions of the residual image frames;

means for motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

means for predicting motion-compensated residual image frames from the motion-compensated extended base layer reference frames and the video; and

means for fine granular scalable coding the motion-compensated residual image frames into a data-stream of temporal frames.

8. The apparatus according to claim 7, further comprising means for fine granular scalable coding the residual image frames into a data-stream of SNR quality frames.

9. The apparatus according to claim 8, further comprising means for combining the data-stream of the temporal frames with the data-stream of the SNR quality frames to construct a single data-stream of the temporal and SNR quality frames.

10. A memory medium for coding video, comprising:

code for coding the video into a data-stream of base layer frames;

code for computing residual image frames in a transform domain from the base layer frames;

code for constructing extended base layer reference frames from the base layer frames and at least portions of the residual image frames;

code for motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

code for predicting motion-compensated residual image frames from the motion-compensated extended base layer reference frames and the video; and

code for fine granular scalable coding the motion-compensated residual image frames into a data-stream of temporal frames.

11. The memory medium according to claim 10, further comprising code for fine granular scalable coding the residual image frames into a data-stream of SNR quality frames.

12. The memory medium according to claim 11, further comprising code for combining the data-stream of the temporal frames with the data-stream of the SNR quality frames to construct a single data-stream of the temporal and SNR quality frames.

13. A method of decoding a base layer data-stream and an enhancement layer data-stream, which collectively represent a video, comprising the steps of:

decoding the base layer data-stream to construct base layer frames;

fine granular scalable decoding an SNR quality frame portion of the enhancement layer data-stream to construct SNR quality frames;

constructing extended base layer reference frames from the base layer frames and at least portions of the SNR quality frames;

motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

fine granular scalable decoding a temporal frame portion of the enhancement layer data-stream to construct motion-compensated residual frames;

combining the motion-compensated extended base layer reference frames with the motion-compensated residual frames to construct temporal frames.

14. The method according to claim 13, further comprising the step of combining the base layer frames and the SNR quality frames into an enhanced video.

15. The method according to claim 13, further comprising the step of combining the base layer frames, the SNR quality frames, and the temporal frames into an enhanced video.

16. An apparatus for decoding a base layer data-stream and an enhancement layer data-stream, which collectively represent a video, comprising:

means for decoding the base layer data-stream to construct base layer frames;

means for fine granular scalable decoding an SNR quality frame portion of the enhancement layer data-stream to construct SNR quality frames;

means for constructing extended base layer reference frames from the base layer frames and at least portions of the SNR quality frames;

means for motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

means for fine granular scalable decoding a temporal frame portion of the enhancement layer data-stream to construct motion-compensated residual frames;

means for combining the motion-compensated extended base layer reference frames with the motion-compensated residual frames to construct temporal frames.

17. The apparatus according to claim 16, further comprising means for combining the base layer frames and the SNR quality frames into an enhanced video.

18. The apparatus according to claim 16, further comprising means for combining the base layer frames, the SNR quality frames, and the temporal frames into an enhanced video.

19. A memory medium for decoding a base layer data-stream and an enhancement layer data-stream, which collectively represent a video, comprising:

code for decoding the base layer data-stream to construct base layer frames;

code for fine granular scalable decoding an SNR quality frame portion of the enhancement layer data-stream to construct SNR quality frames;

code for constructing extended base layer reference frames from the base layer frames and at least portions of the SNR quality frames;

code for motion-compensating the extended base layer reference frames to produce motion-compensated extended base layer reference frames;

code for fine granular scalable decoding a temporal frame portion of the enhancement layer data-stream to construct motion-compensated residual frames;

code for combining the motion-compensated extended base layer reference frames with the motion-compensated residual frames to construct temporal frames.

20. The memory medium according to claim 19, further comprising code for combining the base layer frames and the SNR quality frames into an enhanced video.

21. The memory medium according to claim 19, further comprising code for combining the base layer frames, the SNR quality frames, and the temporal frames into an enhanced video.